

A new *Zonitarius* from Western Africa (Mollusca, Urocyclidae)

by

A. Varga

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Abstract: *Zonitarius lefiniensis* sp. n. (Mollusca, Urocyclidae) is described from Brazzaville (People's Republic of Congo). This medium-sized semi-slug differs considerably from the *Zonitarius* species known so far in the anatomical structure of its male copulatory organ.

Key words: *Zonitarius lefiniensis* sp. n., Urocyclidae, Congo, Africa

***Zonitarius (Belonarius) lefiniensis* sp. n.**

(Figs 1-24)

Diagnosis. – A medium-sized semi-slug with dark pigmentation. Penis and sarcobelum both are surrounded by thin penis-sheath. Sarcobelum is simple, penis with a specially formed papilla. Sarcobelum is a bit longer than the penis. The penis bears a spherical caecum.

External appearance. – The length of the holotype is 32 mm, preserved in alcohol. The body has a tan ground-colour, the side of the body is dark-coloured, ornamented by a net-like pigmentation, which becomes progressively more dense towards the caudal part. Foot, head and back are unicoloured bright. Behind the tentacles 1-1 dark bands spread towards the pneumostoma. The forepart of the mantle has a specific from, ornamented by dark pigment spots, the back area is greyish (Fig. 1). (The preservation in alcohol has weakened the colours, possibly the colours have faded away totally.)

Shell. – (Holotype: Fig. 1, – paratype: Figs 9, 17) – membranaceous, smooth, bright with a scarcely perceptible spiral sculpture. The shell has about two whorls. Measures: 13 x 9 mm (holotype).

Genitalia. – (Holotype: Figs 2-5) – The free oviduct is shorter than the bursa copulatrix. The vagina is very short, its length is one fourth of the free oviduct. The bursa copulatrix has a rather large, cyst-formed sack and a pedunculus which is longer than this sack. The male copulatory organ (penis + sarcobelum) is club-formed, tapers off to its basic part slightly. Both are enclosed in a thin, penis-sheath, which becomes more and more thinner towards the apex of the organ, it can be scarcely perceived in the vicinity of the caecum. Penis and sarcobelum are not connected. Both of them possess different papillae. The papilla of sarcobelum is cambered, tapered. The penial papilla is rather complex, its base is expanded umbrella like, the side is wavy, slightly arched in the direction of the apex. Its apex broadens and levels out. This conical papilla sits on a long, cylindrical penis-section (in situ: Fig. 4, – papilla slightly elongated: Fig. 5). The penis with caecum is smaller than the sarcobelum. The penis has a spherical caecum which is settled at the proximity of the apex of the copulatory organ. The musculus retractor penis is short, it is inserted in the inner part of the caecum. Epiphallus is folded cambe-

redly, it is shorter than the penis. The flagellum is wound, only slightly longer than the half length of the epiphallus. The vas deferens is about as long as the epiphallus + flagellum.

Spermatophore. – (Holotype: Fig. 6) – The head is slightly shorter than the tail and has a fingerlike projection anteriorly. The tail is helicoidally coiled, the cross-section of its middle part is semi-lunar. The first part of the tail is smooth, the rest behind bears unicuspid spines. Some bicuspid spines appear in the middle.

Remarks. – The colour variation of the paratypes: Figs 7, 8, 15, 16, 22, 23. In the smaller sexually mature and juvenile specimens the pigmentation of the foot shows a specific design on the caudal part. Whereas the first part of the foot is almost without pigmentation (it can be feasible also, that it is the consequence of the bleaching effect of the alcohol). In one of the populations (Mbokala Forest) there can be found a dark pigmentband on the frontal part of the mantle border of the juvenile specimens. This is slightly discoloured on the adult specimen (Fig. 7, – marked with an arrow).

The genitals present smaller mutations among the paratypes (Figs 10-11, 12-13, 18-21, 24). The dimensions of the sack of the bursa copulatrix, the relation between the sack and the stem are varying. The free oviduct is shorter. The male copulatory organ can be cylindrical or club-formed. The smaller specimens are characterized by the club form. The musculus retractor penis is bifurcate in one of the paratypes. One branch is inserted on the caecum, the other on the apex of the sarcobelum (Fig. 11). The spherical caecum which was introduced by the holotype does not always characterize the paratypes, this form can be modified in certain specimens. The flagellum is wound, but in one specimen it is straight (Fig. 10). The papilla of sarcobelum is typical, an exception is shown in Fig. 12, where the top part is squatter. I observed two forms of penis-papillae. An "A-form", which corresponds to the holotype (Figs 4, 21), and a "B-form" (Figs 12-13, 24), here the umbrellalike part of the papilla bifurcates in a rather complicated manner, its apex flattens out (cross-section: Fig. 13). The ratio between the head and tail changes in the spermatophora of one paratype. The spined part of the tail is slightly shortened (the spines are typical). The fingerlike projection is small in the top of the head-part. *Zonitarius lefiniensis* sp. n. is well separated from the species known so far by the structure of the male copulatory organ and its particular penial papilla.

Derivatio nominis. – Named after the Léfini Reserve, where the specimens were collected.

Material. – Types are deposited in the Zoological Department of the Hungarian Natural History Museum, Budapest.

Holotype: Congo-Brazzaville, Léfini reservation, Nambouli river, gallery forest, 12. 1. 1964. leg. Dr. J. Balogh – Dr. A. Zicsi (A-3255).

Paratypes: Léfini reservation, 1. 10. 1964. 4 ex. (8.7; 9; 9.2; 17 mm) (A-3256); 12. 1. 1964. 1 ex. (10.4 mm) (A-3257). Léfini reservation, Mbokala forest 8. 1. 1964. 4 ex. (7; 9; 13.7; 15.4 mm) (A-3258); 10. 1. 1964. 5 ex. (25.6 mm = Figs 7-14; 20 mm = Figs 15-21 mm; 14.1; 14.9; 19.1 mm) (A-3259). Léfini reservation, Nambouli river, gallery forest, 7. 1. 1964. 1 ex. (9.7 mm) (A-3260); 12. 1. 1964. 5 ex. (17 mm = Figs 22-24; 11; 13.8; 17.2; 21.5 mm) (A-3261) leg. Dr. J. Balogh – Dr. A. Zicsi.

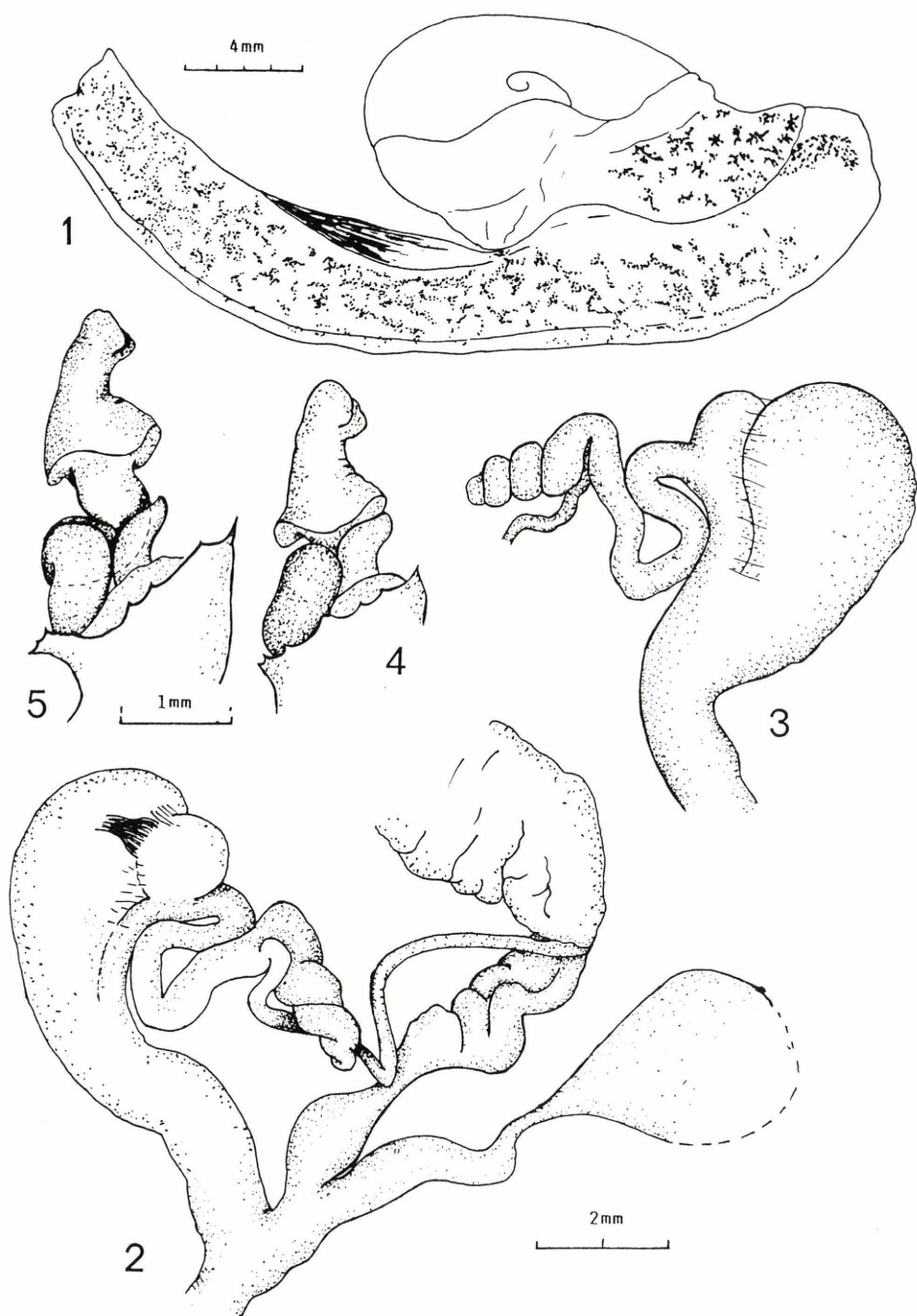
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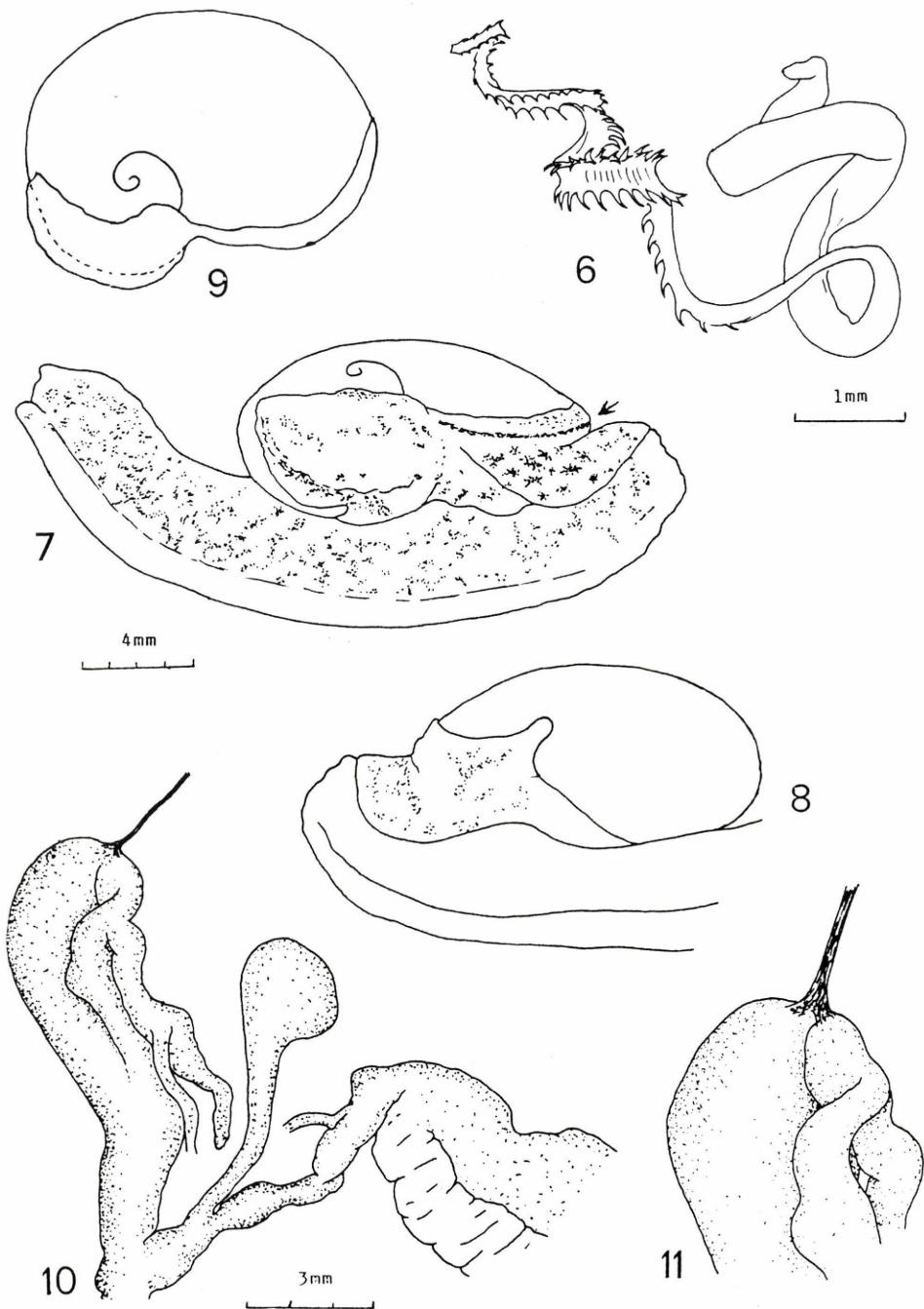
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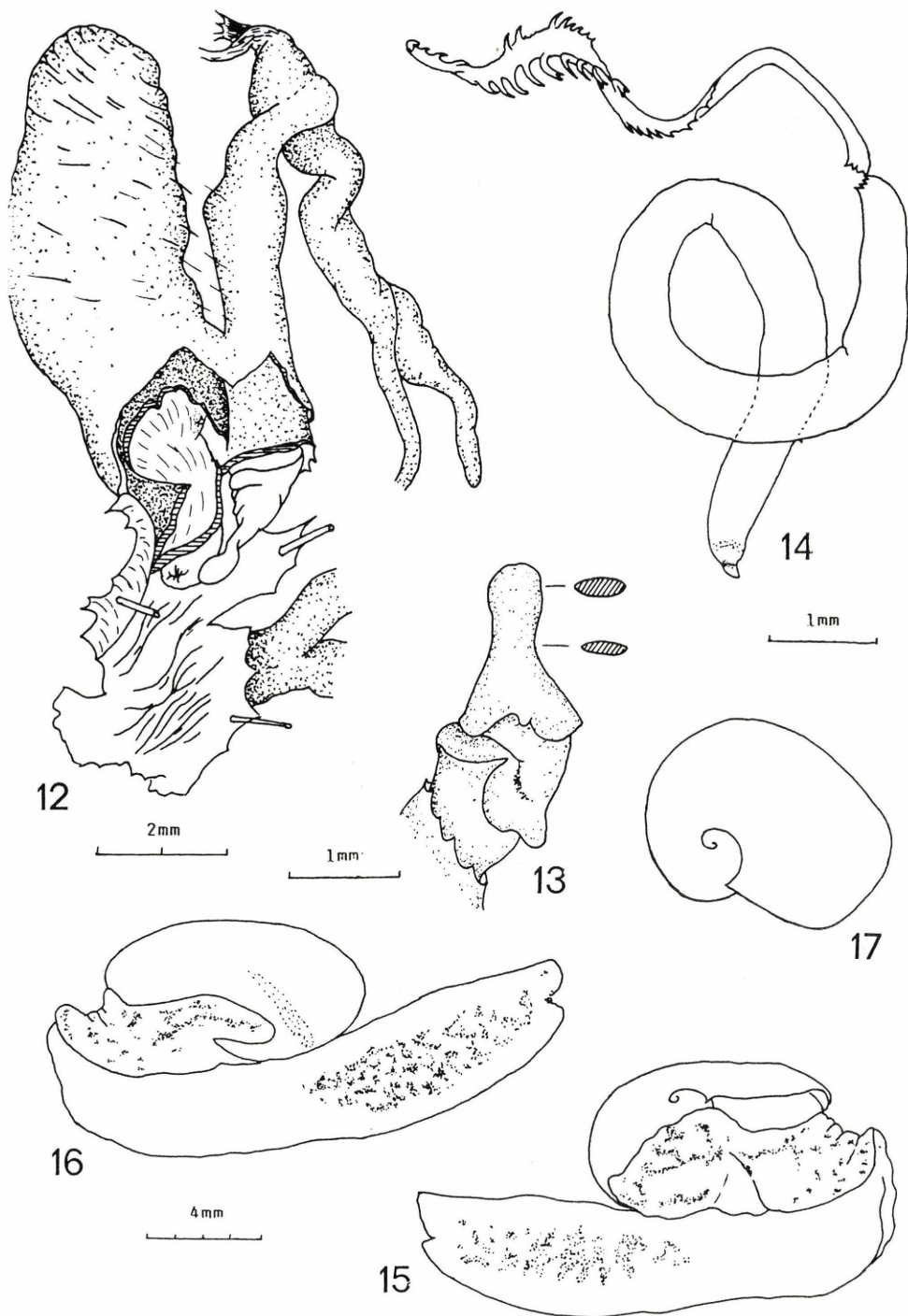
Author's address: András Varga
Mátra Múzeum
H-3200 Gyöngyös,
Kossuth út 40.
Hungary



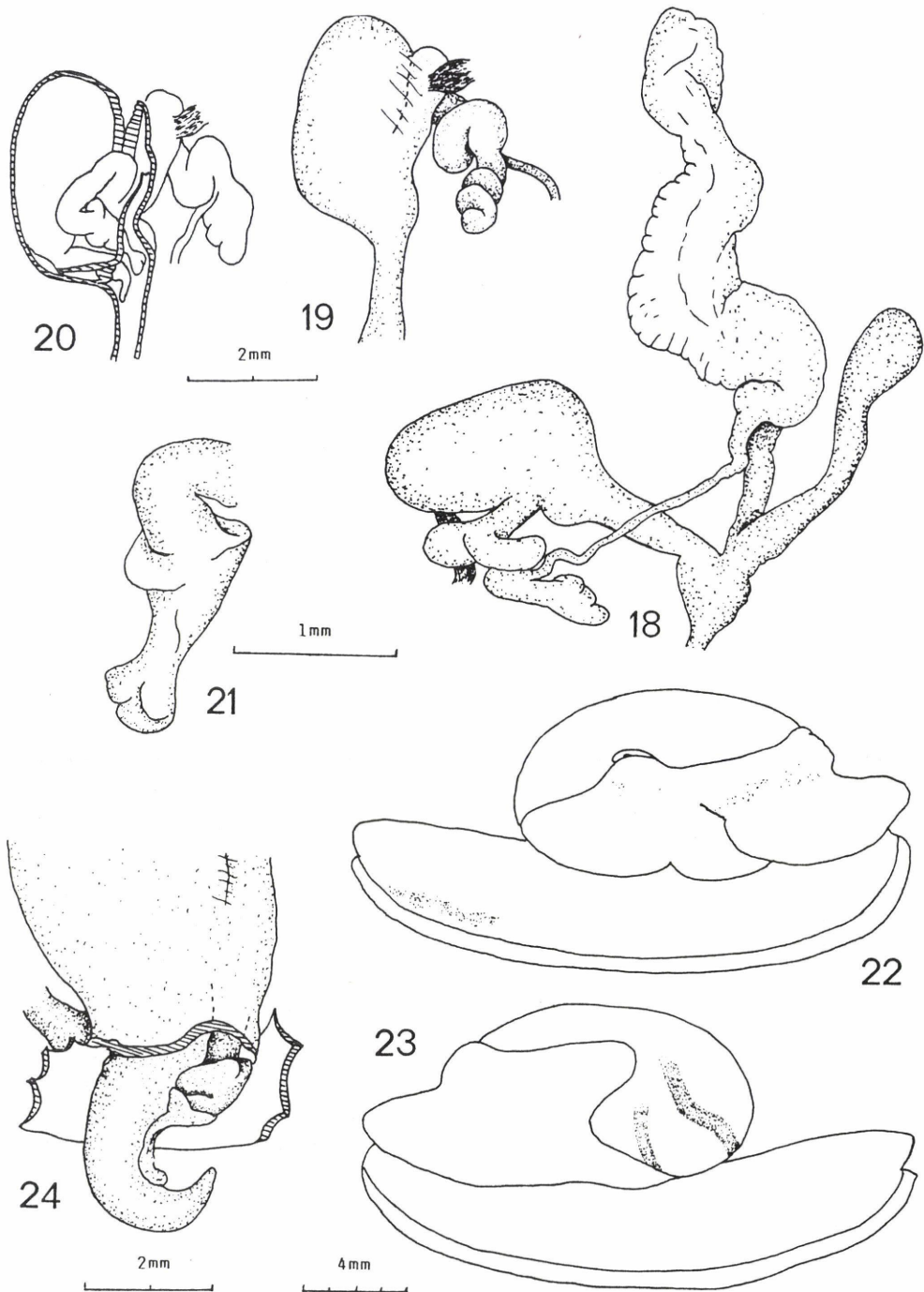
Figs 1-5. *Zonitarion (Belonarion) lefiniensis* sp. n. holotype. 1 = external appearance, 2 = genitalia, 3 = penis viewed from the other side, 4-5 = papillae of penis and sarcobelum (4 = in situ)



Figs 6-11. *Zonitarion (Belonarion) lefiniensis* sp. n. 6 = spermatophore of holotype, 7-8 = external appearance of paratype, 9 = shell of paratype, 10-11 = genitalia of paratype



Figs 12-17. *Zonitarius (Belonarius) lefiniensis* sp. n. paratype. 12 = copulatory organ, papillae of penis and sarcobelum, 13 = papilla of penis, 14 = spermatophora, 15-16 = external appearance, 17 = shell



Figs 18-24. *Zonitarion (Belonarion) lefiniensis* sp. n. paratype. 18 = genitalia, 19 = penis viewed from the other side, 20 = copulatory organ opened, 21 = papilla of penis, 22-23 = external appearance, 24 = papilla of penis and sarcobelum